



Albira Si

- Full Field of View Accuracy, Breakthrough Results

Helping Researchers Do Their Best

In vivo imaging technologies are at the core of advanced preclinical research. Understanding dynamic biological processes, gene expression, enzyme and protein activity, progression and treatment of diseases, biodistribution, pharmacodynamics or pharmacokinetics of new drugs in repeatable, longitudinal studies is building a better future for everyone.

PET imaging is at the forefront of this revolution, and Albira Si, the first commercial SiPM-based PET, is delivering the promise of this technology, Full Field of View Accuracy (FFA), in imaging and quantification. Reinforced by high performance, seamlessly integrated SPECT and CT, and fully compatible with MRI, Albira Si is setting the new standard in what you can expect from the best molecular imaging technology.

The Albira Si is an innovative technology which opens new opportunities for high impact research in understanding disease and assessing candidate treatments, making true personalized medicine possible, with development from bench to bedside.

Albira Si, the next generation of molecular vision technology, is more powerful, more flexible and easier to use than ever, redefining what you can expect and supporting your research to reach new levels.

This major innovation is supported by professional service, outstanding quality, long term support and an extensive global network of excellence centers. Bruker's full focus and commitment to preclinical research is the guarantee you can rely on.

Truly multimodal, highly flexible

- Seamless integration of PET, SPECT and CT in a fully shielded, compact footprint
- Homogeneous resolution and quantitative accuracy in single or multiple simultaneous animal studies
- Accurate dual cardiac/pulmonary PET and SPECT gated imaging
- Full range of animal beds and monitoring accessories for optimum productivity
- Facilitates integration of PET and MR technologies
- Accurate animal positioning with the motorized animal handling system including touchscreen operation enables automatic co-registration of images



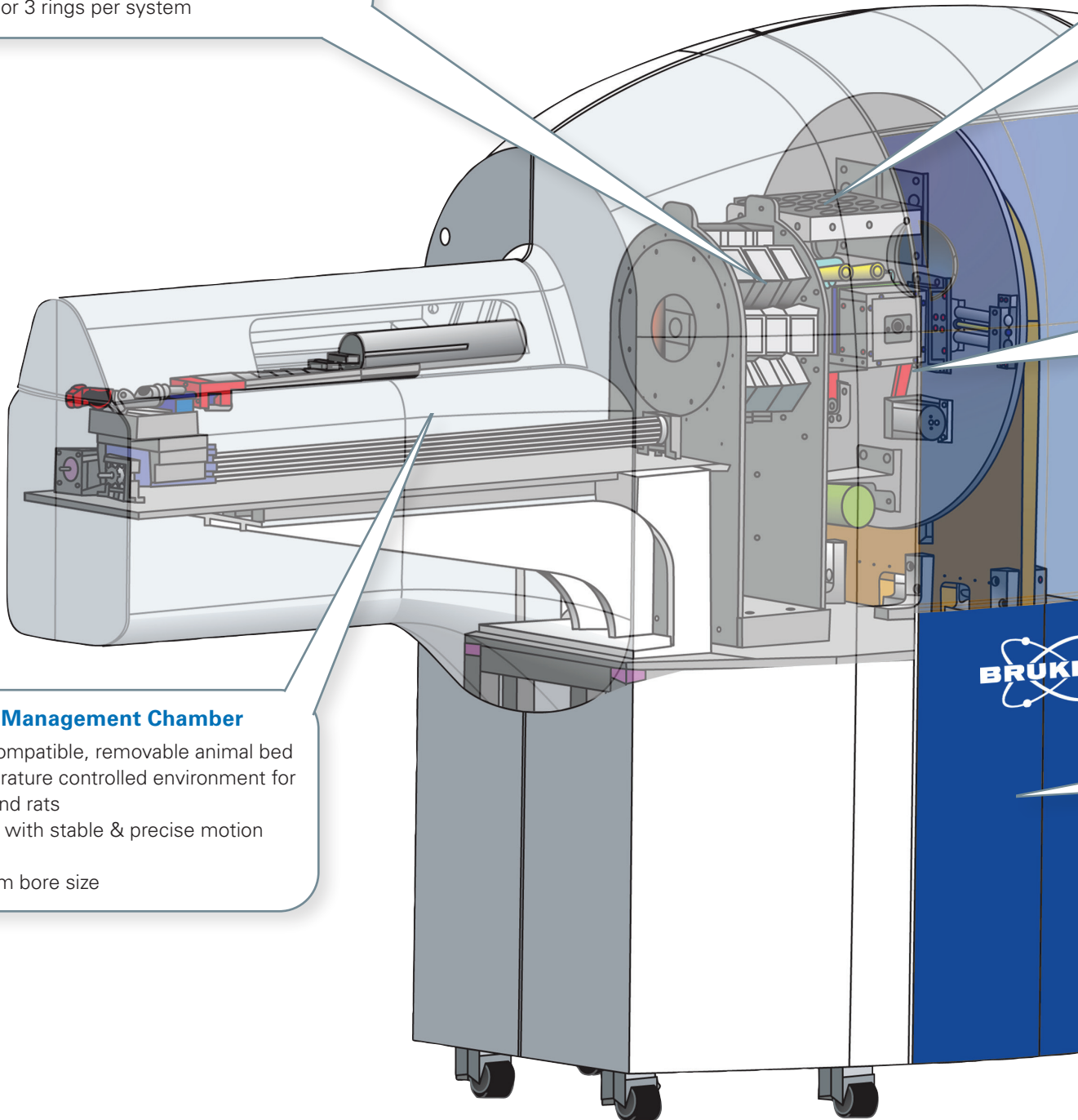
● A Totally New Kind of PET, an Excellent SPECT, and a Reliable, High Performance CT

Exclusive Albira Si PET System

- Patented continuous LYSO crystals, with Silicon photomultiplier arrays
- Advanced depth-of-interaction (DOI) detection enables precise 3D localization of events unconstrained by discrete layers
- High sensitivity detectors, 8 detectors per ring, 1 or 3 rings per system

Animal Management Chamber

- MRI-compatible, removable animal bed
- Temperature controlled environment for mice and rats
- Gantry with stable & precise motion control
- 105 mm bore size



Quantitative, Intuitive CT

- Returns fully calibrated data quantified in Hounsfield units
- Automatic fusion with PET and SPECT images including attenuation correction
- Two-dimensional digital flat panel detector
- Rapid acquisition and reconstruction

High Resolution, Sensitive SPECT

- 2 rotating gamma cameras built with Albira's proprietary single crystal detectors and PSPMTs
- Variable FOV
- Single-, multi-pinhole, high-resolution, and high-energy collimators

Electronics Core

- Embedded acquisition computer
- Easy access for maintenance
- Advanced air cooling system

Small Footprint

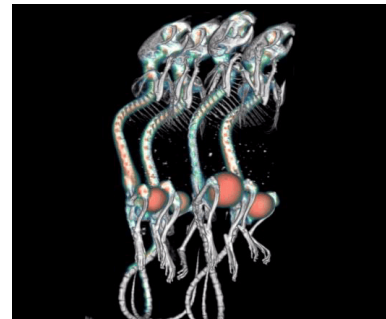
- Compact size (2.2 m x 0.9 m) fits in your laboratory
- Field upgradeable

Albira Si's multiple configurations and upgrade paths protect your investment.

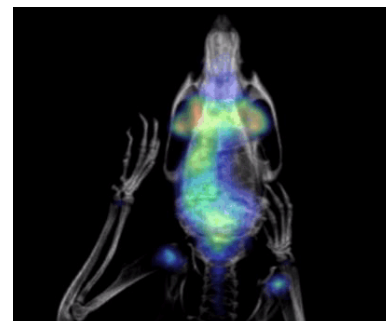
Albira Si will fit in virtually any lab and can be purchased in many configurations to suit your needs. You can easily upgrade as your research changes over time. Your capabilities expand, but the size of your system does not.

Seven systems available:

- Standalone PET
- Standalone SPECT
- Standalone CT
- Bi-modal PET/CT
- Bi-modal PET/SPECT
- Bi-modal SPECT/CT
- Tri-modal PET/SPECT/CT



PET/CT optimizing time and dose:
NaF, 10 min PET acquisition, 140 μ Ci
dose. Courtesy of Dr. Matthew Leevy,
Univ. of Notre Dame, Indiana, USA



Neurology: stroke model, mouse head
PET/CT. 20 min. acquisition, 200 μ Ci
FDG dose. Courtesy of Prof. J. Cortijo,
FIHGU, Valencia, Spain

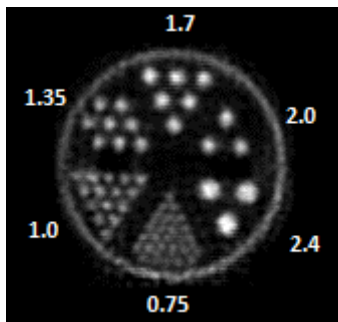
● Albira Si: the New Standard in Multimodal Preclinical PET Imaging

True breakthroughs in technology for improved research results are rare, with "simple" incremental evolution as the norm. Real revolutionary innovations which change what we can expect are a defining moment. Albira Si is one of these few special opportunities, with proven superior specifications and the radical advantages which will make your research better.

Full Field Accuracy (FFA)

FFA offers real, homogeneous sub-millimetric volumetric PET resolution in all three axes in the whole field of view, with superior precision in quantification based on:

- Exclusive continuous crystal detectors with new Si PM technology and true depth of interaction
- 3D precision equivalent to 10+ layer pixelated crystal detectors
- Virtual pixels optimizing very fast, low dose, maximum sensitivity studies and allowing software based performance upgrades
- Proprietary electronics and software with row and column readout, enabling advanced depth-of-interaction measurement and correction. This patented technology generates an area of optimum resolution up to 10 times larger than conventional options.



PET image of a Derenzo phantom shows resolution of better than 0.75 mm.

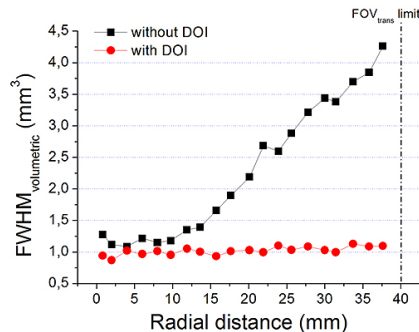
Best in class specifications under real lab conditions

- Resolution up to 0.7 mm
- Sensitivity of 12%
- NEMA NECR peak rates: mouse 560 kcps, rat 330 kcps
- Unprecedented quantification and dynamic study performance
- Large axial FOV of 148 mm
- Cardiac and respiratory gating

Seamlessly integrated Trimodal system

- Unparalleled ease of use and reliability
- Optimum animal comfort
- Transport system fully compatible with Bruker's MRI
- Fully shielded for optimum radiation safety
- Compact and lightweight
- Simple installation and maintenance, world class support
- Proven core technology, in an expanding global installed base

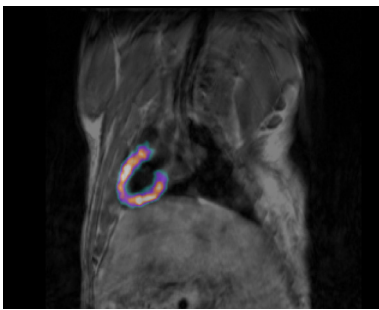
Right: Sodium fluoride PET scan, mouse, with clear visualization of ribs. 10 min. acquisition, 110 μ Ci dose. Courtesy of CIPF, Valencia, Spain



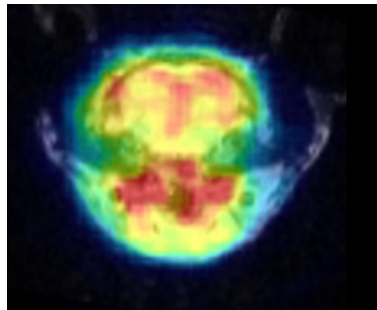
Real DOI correction -> full field of view accuracy in the whole FOV

Albira Si...the New Standard for Every Research Field

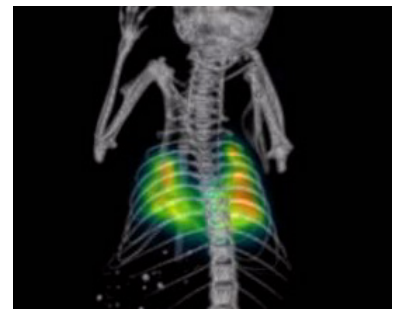
Oncology
Neurology
Cardiology
Metabolic disease
Drug Discovery
Bone Disease



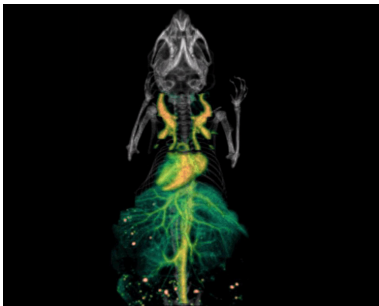
Cardiology: rat heart fused, PET (10 min. acquisition, 186 μ Ci FDG dose), MRI 17 min. acquisition. Courtesy of Professor Vicente Felipo, Centro de Investigacion Principe Felipe, Valencia, Spain



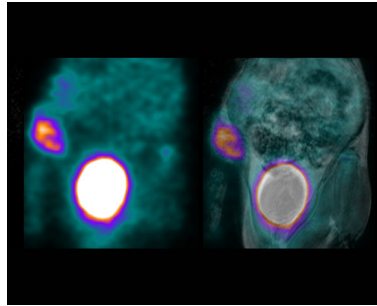
Neurology: mouse head PET/CT. 20 min. acquisition, 200 μ Ci FDG dose. Courtesy of Dr. Maria Jesus Vicent, Centro de Investigacion Principe Felipe, Valencia, Spain



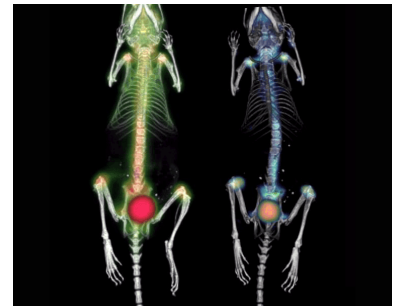
Perfusion SPECT imaging: ^{99m}Tc -MAA imaging of mouse lung perfusion. Courtesy of Dr. Matthew Leevy, Univ. of Notre Dame, Indiana, USA



Mouse CT: Aurovist gold nanoparticle scan with visualization of visceral structures. Courtesy of Dr. Matthew Leevy, Univ. of Notre Dame, Indiana, USA



Oncology: PET and PET/MR fusion, leg tumor, mouse. 10 min PET acquisition, 100 μ Ci dose, 10 min. MRI, Courtesy of Dr. Victoria Moreno, Centro de Investigacion Principe Felipe, Valencia, Spain



PET/CT NaF, 10 min PET acquisition, 110 μ Ci dose + SPECT CT MDP, mice. Courtesy of Dr. Matthew Leevy, Univ. of Notre Dame, Indiana, USA

 **Bruker BioSpin**

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